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AGRICULTURAL NEWS LETTER

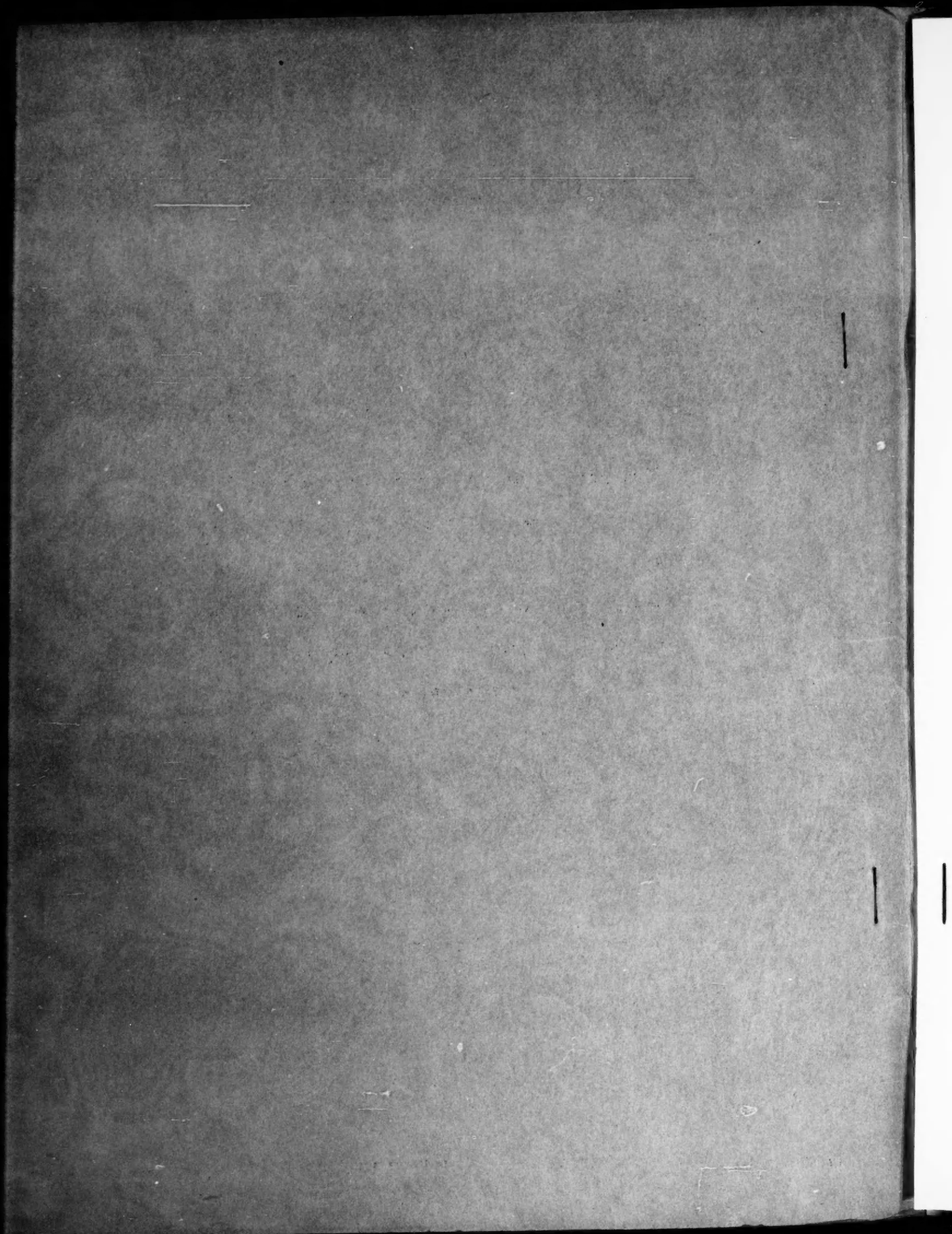
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This publication contains information regarding new developments of interest to agriculture based on laboratory and field investigations by the Du Pont Company. It also contains published reports of investigators at agricultural experiment stations and other institutions as related to the Company's products and other subjects of agricultural interest.



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AGRICULTURAL NEWS LETTER

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CONTENTS

Page

Trade-Mark "Orlon" Adopted for Synthetic Fiber.....	102
Value of Beef-Cattle Ration Containing Urea and Corncobs.....	103
Why Poison Blackjack Oaks With "Ammate".....	106
Way to Eradicate Blackjack Oaks and Other Hardwoods.....	107
Du Pont Introduces New, Lightweight Metal.....	109
U.S. Plant Pathologist Lists Benefits of Seed Treatment.....	110
One of Simpler Ways to Combat Fungous Diseases.....	110
Dynamite Is Farm Tool.....	112
New Formulation To Control Screwworms.....	113
Durability of Species Used As Fence Posts In New York.....	114
Glass-Jar Gravity Method of Treating Fence Posts.....	114
Nylon Citrus Picking Bags Highly Satisfactory.....	116
Mistakes to Avoid In Growing Fall Oats	117
American Farmers Operate Millions of Automotive Units.....	118
Cooling System Should Be Inspected.....	119

THE DU PONT COMPANY ADOPTS TRADE-MARK "ORLON"
FOR SYNTHETIC FIBER PREVIOUSLY CALLED FIBER A

The Du Pont Company has adopted the trade-mark "Orlon" for a synthetic textile fiber on which it has been conducting research for several years, and which has previously been known only as Fiber A.

Known Technically As Polyacrylonitrile Fiber

Technically the material is called a "polyacrylonitrile fiber." Quantities required for the development work are being made in a laboratory-scale pilot plant.

"Orlon" acrylic fiber offers some properties which the company said are outstanding contributions to the textile industry. Its resistance to degradation by sunlight commends it for use in awnings, automobile tops, and other outdoor uses.

Its resistance to chemical attack, particularly by acids, and its ability to withstand elevated temperatures fit it for use in filtration applications and chemical-resistant cordage and threads.

The esthetic qualities of fabrics made of "Orlon" are demonstrated in lovely household curtains which are easily laundered and resist deterioration by sunlight and atmospheric gases. The fabrics have a warm hand and are supple.

Development Originated in 1940

The development originated in the Pioneering Research Section of the Rayon Department in 1940, when work was begun on vinyl type compounds and their possibilities for fibers and films.

FEEDING VALUE OF BEEF-CATTLE RATION CONTAINING GROUND CORNCOBS,
MOLASSES, UREA, AND AN OILSEED MEAL PROTEIN SUPPLEMENT TESTED

A ration of alfalfa hay, ground corncobs, molasses, synthetic urea, and an oilseed meal protein supplement fed to beef cattle on the Garst and Thomas Hybrid Corn Company farm at Coon Rapids, Iowa, has given an average of about one and three-fourths pound weight gain per animal per day. This latest feeding trial in a series of three began in May, 1948.

Tests Made To Determine How Far Cobs Can Replace Corn and Roughage

These interesting experiments in beef-cattle feeding are being made to determine how far corncobs can be used profitably to replace corn and roughage in the ration. It is an outstanding example of how a practical farmer can adapt the findings of official agricultural research workers to his own farming operations.

Follow Experiments Conducted at Ohio Experiment Station

Roswell Garst has followed the cob feeding work at the Ohio Experiment Station during the past six years. He points out that for many years, his company has been shelling hundreds of thousand of bushels of seed corn each year, and putting all the cobs in one big pile containing several thousand tons.

"It is only natural that we want to find some economic use for a product which for generations has been regarded as a nuisance and a waste," he says. "We became acquainted with the work being done at the Ohio Agricultural Experiment Station at Wooster by Paul Gerlaugh, Wise Burroughs, and L. E. Kunkle. After consulting G. Bohstedt, head of the Animal Husbandry Department of the University of Wisconsin at Madison, we carried on a carefully conducted experiment in the winter of 1946-47."

Then in the winter of 1947-48, Garst commercially fed nearly 600 head of steers on a ration of ground cobs, molasses, urea, and soybean oil meal without hay for 100 days, and obtained an average gain of 1.35 lbs. daily per head.

"There's Gold In That Cob Pile"

As a result of increasing interest in these feeding tests, the Garst and Thomas Company issued a booklet called "There's Gold In That Cob Pile" to answer the question: "Do corncobs have real feeding value?"

Continued on next page

The booklet says that as a result of six years of carefully controlled experiments, involving 650 steers, calves, and yearling feeders in 39 lots, Gerlaugh and his associates at Wooster, Ohio, "arrived at the conclusion that ground corn-cobs had a feeding value of between one-half and two-thirds as much, pound for pound, as shelled corn had, up to one-third of the ration. It is well to note that in each case the steers received a suitable protein supplement and limited quantities of hay."

Hybrid Corn Company Conducts Own Feeding Tests In Iowa

Mr. Garst was impressed with these Ohio results, but wanted to know what cattle would do if fed more than one-third cobs and two-thirds corn. For his first trial the fall of 1946, he fed five pens of cattle -- six head to a pen -- to find out what cobs would do when used in excess of the amounts used in the Ohio experiments. Although daily gains were somewhat less when all shelled corn was left out of the ration, the saving per hundred pounds of gain on the all ground cob, hay, and protein meal ration was well over \$7.00 per hundred.

Daily Ration Fed During Summer of 1948

As a result of these highly encouraging tests, reported in detail in the booklet, 19 head were fed during the summer of 1948 the following daily ration:

50 lbs. mixture of 25 lbs. soybean meal and 25 lbs. linseed meal.
45 lbs. molasses and 5 lbs. "Two-Sixty-Two" feed compound (urea).
50 lbs. bright baled alfalfa.
300 lbs. ground corncobs.

They gained at the rate of one and three-fourths pounds per head per day at an average daily feed cost of 28 cents per animal for 120 days without receiving a kernel of corn.

The booklet explains that urea is a synthetic nitrogen compound that can serve as a partial source of protein, and was obtained in the form of "Two-Sixty-Two" feed compound, manufactured by the Du Pont Company. "Two-Sixty-Two" feed compound is equivalent to 262% protein when properly balanced with carbohydrate in the ration. Urea is only suitable for feeding ruminants -- cattle, sheep, and goats -- and is only suitable for use up to one-third of the total protein intake.

Booklet Says Method of Feeding is Exceedingly Simple

"The dry ground corncobs and the dry soybean oil meal and linseed meal are simply placed in the feed bunk," the booklet says. "Then the mixture of 50 lbs. molasses and 'Two-Sixty-Two' is diluted with about 50 lbs. of water to remove the stickiness, and this thin syrup is poured on the feed in the bunk and stirred around with a hoe. The cattle are only fed this once a day -- in the morning.

Continued on next page

"Then in the evening they are fed 50 lbs. of good, bright alfalfa hay in the feed bunk on top of the remaining cobs, and they clean up the alfalfa hay and the remaining cobs during the night. If the bunk is perfectly clean, we add a few extra cobs the next day -- if some remain we reduce the number of cobs somewhat -- the other feed being held constant."

The booklet points out that four ounces of "Two-Sixty-Two" contains approximately the same amount of protein equivalent as a pound and a half of soybean oil meal. It explains that the "Two-Sixty-Two" dissolves well in molasses. Not only is it a convenient way to feed, but nutritional research has shown that readily available carbohydrate in the ration favors the most effective utilization of urea by the animal.

Discusses Ration for Use of Cobs Without Urea and Molasses

The booklet gives a ration for use of cobs without urea and molasses. It adds: "This will not be quite as economical a ration as where urea can be used, but will be extremely economical compared with a normal corn ration." It also outlines a detailed program of feeding without the molasses and urea, based on the work at Madison, Wooster, and Coon Rapids, by which the average farmer can "make cobs worth more than \$20 per ton." It says most any corn has 12 pounds of cobs per bushel, so that if a farmer shells 1,000 bushels of corn he has six tons of cobs.

Copy of the booklet "There's Gold In That Cob Pile," with supplementary "Progress Report On Cob Feeding Operation, Summer of 1948," will be sent upon request. Address Garst & Thomas Hybrid Corn Co., Coon Rapids, Iowa.

EDITOR'S NOTE: "Two-Sixty-Two" feed compound is highly concentrated. As is the case with any concentrated material, it must be completely and effectively pre-mixed, before feeding, with suitable supplements -- protein meals, molasses, or grains. Suitable molasses-urea mixtures or high-protein oilseed meal supplements containing "Two-Sixty-Two" for feeding with ground cobs can be obtained from many feed manufacturers.

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WHY POISON BLACKJACK OAKS WITH "AMMATE"

"The Southern Forest Experiment Station started experimenting with 'Ammate' Weed Killer as a tree poison on blackjacks in October, 1944. Since then this chemical has been tested in different forms, quantities, and seasons.

"Practically all the blackjack oak trees and sprouts treated with 'Ammate' were killed when the chemical was properly applied in the strength recommended. A few large trees and some saplings and sprouts put out new leaves the next year, but these usually died before the year was over.

"On the basis of these tests, 'Ammate' is recommended as the most effective chemical in killing blackjack oaks. The chemical is not poisonous to animals.

Infested Lands Cannot Produce Good Timber or Grazing

"Hundreds of thousands of acres of forest land in the South are infested with low-grade hardwoods, mainly blackjack or scrub oaks. These lands cannot produce good timber or grazing, because the scrubby hardwoods are so thick and persistent. Thus, there is little or no income being derived from such areas.

"Many landowners want to put scrub oak lands back into production of timber or into seeded-fertilized pastures, but must first clear or reduce the heavy stands of oaks.

"Blackjack oaks and many other hardwoods are hard to kill by girdling and ordinary methods, because prolific sprouting occurs when the tops are killed without killing the roots. Thus a method is required that will kill both roots and tops in one operation." --Excerpts from Revised Instructions issued by the U. S. Southern Forest Experiment Station.

Continued on next page

When To Poison -- "'Ammate' crystals applied in cups chopped in trees at ground level are effective on blackjack oak at any season," says the U.S.D.A. Southern Forest Experiment Station.

"Spraying sprouts with a strong solution is effective any time during the year while the foliage is green."

Of the three methods -- pulling, cutting, and poisoning -- tried by government forest ecologists to eradicate blackjack or scrub oaks, "only poisoning is effective and cheap enough to be practicable on a large scale."

So says James J. Brasington, commenting on the work of Peavy and Campbell of the U. S. Department of Agriculture's Southern Forest Experiment Station at New Orleans. Writing in the February, 1948, issue of "The Forest Farmer," Mr. Brasington reports that since earlier tests showed "Ammate" weed killer will kill scrub oaks effectively, a further test on ten acres was started in September, 1947.

He adds that with the cutting treatment, only 91 trees per man-hour were cut. Thus, he found labor costs were about equal, and the main difference between poisoning and cutting costs was the expense of the "Ammate." He adds that with larger trees, poisoning probably requires less labor than cutting, and that this saving in labor cost will partly pay for the "Ammate."

He explains that pulling is ineffective because of sprouting, and because of the high cost of \$9.91 per acre.

-107-

Cost of Poisoning Varies

"Costs of poisoning will, of course, vary with the size of trees, number per acre, crew efficiency, and other factors. Each landowner may want to poison a small trial area to determine accurate costs and results for his particular conditions. The cheapest way would be to poison only the scrub oaks that are directly interfering with pine seedlings. Where there is a good pine seed source, however, it should pay to poison all scrub oaks so that additional pine can seed in and grow unhindered. The success of this latter method naturally depends on how completely the oaks are killed and sprouting prevented."

U. S. Southern Forest Station Revises Instructions

Last fall Fred A. Peevy issued revised instructions on "How to Kill Blackjack Oaks With 'Ammate.'" He explains that, once the farmer decides to rid his acres of this nuisance, "a method is required that will kill both roots and tops in one operation." He adds that experiments show that scrub oaks can be practically eradicated by poisoning with "Ammate."

"When crystals of this chemical are properly applied, it kills the tree and its roots and prevents resprouting," he says.

Other Hardwoods On Which "Ammate" Is Effective

Mr. Peevy says farmers and foresters in many parts of the South have also found "Ammate" effective not only against blackjack oak but, when injected into the trees, against numerous other trees, among which he lists sweetgum, blackgum, elm, ash, cypress, bay, willow, red oak, post oak, pin oak, water oak, and pine. He says it works slowly on hickory, bitter pecan, beech, persimmon, ironwood, and white oak, which require a heavier dose than the other species mentioned. Spraying has proved effective on small sprouts of oaks, sweetgum, blackgum, hickory, bay, willow, and sumac. It also severely sets back persimmon sprouts.

How To Apply "Ammate"

The revised instructions tell how to apply the chemical on trees and on sprouts. On larger trees the crystals are applied in "cups" -- notches at the base of the tree made with two ax strokes, one above the other, with the chip pried out. However, trees under 3 inches in diameter at breast height, too small to cup, may be cut down close to the ground, leaving a V-shaped stump. "Ammate" crystals should be applied to the freshly cut stump immediately.

Mr. Brasington treated smaller trees by making a split with one ax stroke. The split is opened by bending the tree back so the poison can be applied.

A three-man crew, one poison man and two ax men, can treat on the average an acre about every four hours. Sprouts and small trees can be controlled by

Continued on next page

spraying their green leaves thoroughly with a water solution of "Ammate." On bitter pecan a better kill is secured if the stems are also sprayed.

Cutting of Large Poisoned Trees Should Be Delayed

"Large trees poisoned with 'Ammate' should not be cut down for at least a year because this usually causes sprouting," the government instructions say. "The poisoning effect of 'Ammate' appears to continue for a year or more. Trees that seem resistant may die the second growing season if they are not cut down."

NOTE: For copy of the latest detailed instructions on "How To Kill Blackjack Oaks with 'Ammate'," write to the Director, Southern Forest Experiment Station, 1008 Federal Office Building, New Orleans 12, La.

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DU PONT INTRODUCES NEW, LIGHTWEIGHT METAL

The Du Pont Company announces it has begun the small-scale manufacture of titanium metal, a new basic raw material for industrial development.

This, so far as the company knows, is the first time ductile titanium metal has been produced for commercial exploration. The U. S. Bureau of Mines has been producing the metal for research purposes.

The silver-white metal is light and strong. It is highly resistant to corrosion, and has a higher melting point than the commonly used metals. It is comparable to stainless steel in strength and corrosion resistance, but weighs only a little more than half as much per unit of volume. It is less than twice as heavy as aluminum, but several times as strong, in bars of comparable dimensions.

Du Pont is producing and offering it for exploration as a basic raw material for industry and engineering. It has many interesting properties, but exhaustive research will be needed to develop the full possibilities of titanium metal. When this work is done, and if titanium alloys work out as expected, scientists believe they may have a new family of structural materials far superior in many ways to any metals or alloys now known.

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U.S. PLANT PATHOLOGIST LISTS BENEFITS OF SEED TREATMENT

R. W. Leukel of the U. S. Dept. of Agriculture experiment station at Beltsville, Md., lists the benefits of present-day seed treatment, as follows:

1. It destroys the seed-borne fungi that otherwise would reduce the yield and quality of the crop.
2. It combats soil-inhabiting fungi that rot seed and that destroy seedlings.
3. It helps combat weeds by making possible good stands of vigorous crop plants.
4. In many cases, it increases the market value of crops, particularly of grain.

**U. S. DEPARTMENT OF AGRICULTURE AUTHORITY SAYS DISINFECTING SEED
"ONE OF SIMPLER, LESS EXPENSIVE" WAYS TO COMBAT FUNGUS DISEASES**

Seed treatment, according to the U. S. Department of Agriculture, has proved one of the simpler and less expensive means of making headway against certain fungous diseases.

"Crops are made to flourish through assistance, direct and indirect," says R. W. Leukel, plant pathologist at the Agricultural Research Administration experiment station at Beltsville, Md. "On the one hand, crops are grown in well-prepared soil from seed of adapted high-yielding varieties. On the other, treating seed protects against attack by soil-borne or seed-borne diseases; or, if attacked, the damage is controlled."

The Bureau of Plant Industry pathologist says: "Seed treatment occupies a prominent place among agricultural practices that are continually subject to change and improvements."

Continued on next page

Agricultural News Letter, Vol. 14, No. 5, November-December, 1946

"Seed treatment has been practiced for nearly fifty years, beginning with the use of copper sulfate and formaldehyde, used mostly on seed of small grains," he adds. "Then came organic mercury liquid treatments and copper carbonate dust; later the development of various organic mercury compounds and recently highly effective non-mercurial organics in dust form. Nowadays the dusts are used for most of the seed treating."

Mr. Leukel adds that accurate figures have not been compiled on the quantities of these various dusts now used.

"Extension workers estimate, however, that in 1947 this sort of seed treatment was applied to 70 per cent of the corn planted (nearly all the hybrid corn); 50 per cent of the sorghum; and 20 to 30 per cent of the wheat and barley," he says. "A high percentage of cottonseed is now treated, and the treatment of peanut seed is increasing."

Credits Research Men With Major Contributions

The quality of chemicals sold for this purpose has been improving, according to Mr. Leukel, who attributes the better quality to work carried on by research men. Another result of research, he says, is a great increase in the kinds of crops that can be protected this way.

Recent Developments In Seed Treatment

A comprehensive review of the "Recent Developments In Seed Treatment" by Mr. Leukel appears in the May, 1948, issue of "The Botanical Review," Vol. 14, No. 5, pages 235 to 269, inclusive. It lists 173 articles on the subject under the heading "Literature Cited." It also explains that "greater interest in and acceptance of seed treatment as a farm practice in the past few years are due to a number of factors," including increased use of hybrid corn, which is "almost invariably treated before planting"; wartime advocacy of increased yields by eliminating losses due to plant diseases; increased experimental and extension activities; improved treating equipment; and better materials and methods.

Cites Development of Slurry Method As Example

"A recently designed seed treater applies the fungicidal dust to seed in the form of a slurry, a heavy suspension of a wettable form of the dust in water. (Here Mr. Leukel cites an article by Gilbert F. Miles on "The Slurry Method of Treating Seed Corn," in the Du Pont "Agricultural News Letter," Vol. 14, pages 71-74, 1946.) This method of treatment adds from 0.5 to 1% of moisture to the seed, but this is largely on the surface and much of it soon evaporates. The slurry method eliminates the danger and discomfort attending the application of certain fungicides in dust form. It is now used to a considerable extent for treating seed of hybrid corn. These and other advances in materials and methods have created greater interest and confidence in the practice of seed treatment."

#####

AGRICULTURAL TEACHER SAYS SINCE DYNAMITE IS FARM TOOL
FOR DRAINAGE IT HAS PLACE IN VO-AG TEACHING PROGRAMS

"Dynamite has a definite place as a farm tool for drainage and land clearing, and as such has a place in the vocational agricultural teaching program in our high schools."

So says Carl G. Floten, agricultural instructor in The Dalles, Oregon, High School. Mr. Floten cites his experiences while instructor at the Halfway, Oregon, High School, where his agricultural classes participated as a group in dynamiting demonstrations on several farms. In these projects, the Future Farmers of America, working under his supervision, laid out drainage ditches, set the powder, and did the actual shooting.

"Some instructors may be reluctant to use dynamite around students, but my experience would indicate proper use of such powder is considerably easier to teach than proper safety methods with power machinery in the shop or on the school farm, which can be equally dangerous," Mr. Floten says. "Also, most of the large powder companies maintain specially trained men, who are available to assist instructors of agriculture in starting such a program."

The Halfway High School is located in a high, irrigated valley in the Blue Mountains of Baker County in eastern Oregon. As with many older irrigated areas, many of the finest soils need some drainage, according to Mr. Floten.

Factors That Encouraged Use of Explosives

"Deep, fertile soil, high in organic matter, and heavily saturated with water, would not support heavy ditching machinery without severe damage to field or completely miring machinery," he adds. "Further complicating the problem was the shortage of labor and high costs of hand ditching. These factors encouraged the use of ditching dynamite to construct drainage ditches."

Cites Own Experiences In Supervising Student Demonstrations

Mr. Floten says ditching of this type was first demonstrated in this valley by County Agent Cliff Conrad and by Art King, soils specialist of the Oregon Agricultural Extension Service, with the cooperation of the Halfway FFA chapter, under Mr. Floten's supervision.

"At this initial demonstration, 105 farm people attended, and were favorably impressed with the possibilities of this method," he says. "As a result, a blasting machine and 250 feet of insulated detonating wire were purchased for the use of the Halfway High School vocational agriculture department. The equipment was promptly put to use in the community under the supervision of the agricultural teacher. Many farm operators used the equipment on loan from the school, after first attending other demonstrations put on by the FFA chapter."

#####

NEW DU PONT FORMULATION OF DIPHENYLAMINE AND BENZOL
CONTROLS SCREWORMS THAT ATTACK WOUNDS OF LIVESTOCK

The Du Pont Company's Animal Industry Division announces a new and improved formulation of the proven effective chemicals for control of screwworms, external parasites that cause millions of dollars damage to livestock each year.

This new product, called Du Pont Screwworm Smear 220, contains 60% active ingredients, divided equally between diphenylamine and benzol, a combination that may be applied to wounds to repel the screwworm fly and thus protect against infestation, or to infested wounds to kill the parasites already there.

Diphenylamine and benzol have been used for several years in the Government's Formula 62 to treat wounds caused by accident or by such necessary practices as dehorning or shearing. However, the new Smear 220 contains different inert materials, and is formulated as a stable ready-to-use emulsion instead of as a suspension. It is thoroughly mixed, and will not separate as long as it is not subject to freezing temperatures.

Leaves No Unsightly Residues on Animal Being Treated

Because of its white or light-gray color, the new formulation leaves no unsightly residues on the animal whose wounds are being treated, as in the case with smears made by the original and modified Government formulas which include lamp-black as one of the inactive ingredients.

Smear 220 has good healing qualities. Preliminary field tests indicate it does not irritate wound tissue, thus permitting rapid healing while at the same time repelling or killing the harmful parasites.

How To Use Du Pont Screwworm Smear 220

Du Pont veterinarians say the new emulsion can best be applied with a one-inch brush, treating all wound surfaces thoroughly and swabbing well around the wound where there may be blood. They add: "It is not necessary to probe for maggots, but the smear should be pushed well into the pockets formed by them. Treatment should be repeated every two to four days until the injury has healed. Label precautions should be carefully observed."

#####

ESTIMATED DURABILITY OF NATIVE OR INTRODUCED
SPECIES USED AS FENCE POSTS IN NEW YORK

Chemical Treatment Recommended

Since any post should have a life in service of at least 10 to 20 years, preservative treatment is recommended by J. A. Cope, Extension forester, Cornell University, for all species listed below.

Durability 5 to 10 Years -- Slippery elm, black cherry, butternut, sassafras, rock oak, hemlock, tamarack, European larch, and non-heartwood of white cedar.

Durability Less Than Five Years -- White ash, red oak, black oak, red maple, sugar maple, hickory, white elm, popple, beech, sycamore, chestnut, ironwood, black birch, yellow birch, tulip tree, basswood, white pine, red pine, Scotch pine, and Norway spruce.

Not Requiring Chemical Treatment

Durability 20 Years -- Red cedar, mulberry, osage orange, and black locust.

Durability 10 to 20 Years -- White oak, swamp white oak, honey locust, and heartwood of white cedar.

GLASS JAR ATTACHED TO NEWLY CUT FENCE POST HELPS DEMONSTRATE
GRAVITY METHOD OF TREATING WITH CHROMATED ZINC CHLORIDE

A simple and effective way to apply solutions of chromated zinc chloride to increase the serviceable life of newly cut, green, bark-covered fence posts has been suggested. It is to use a glass jar with perforated lid and a wick attached to the top of each post. Gravity does the rest.

In discussing this so-called end-flow or gravity method, J. A. Cope, Extension forester at Cornell University, says: "The chemical is introduced into fresh-cut green fence posts, from which the bark has not been removed, by placing a container full of the solution on top of the post, and allowing the pull of gravity to take it down."

Continued on next page

Glass-Jar Method Easy to Do -- Gives Good Results

Mr. Cope says suitable containers include tire tubes, sections of pipe, tin cans, and glass jars. He prefers the glass-jar method because it is easy to do, gives good results, and makes it considerably easier to show farmers how the chemical permeates the wood through the sap stream.

"Farmers at demonstrations such as are put on by county agents throughout the country can actually see the air bubbles coming up in the jar, and the liquid slowly going down," he says.

How To Treat Posts By Glass-Jar Method

"In using this method, a wick of cotton or wool cloth is cut in the shape of a disc the exact size of the top of the post, and tacked in place after wetting," Mr. Cope explains. "The glass jars with tin lids which screw on are used. The lid is nailed on top of the post after eight or nine holes are punched through it with a tenpenny nail, to permit ready flow of the solution. The post is then held upside down by an assistant, while an operator screws the glass jar full of solution into the top. The post is then inverted, which places the container in a position so that the contents can drain down through the post."

Gravity Method Can Be Used Anytime When Wood Is Not Frozen

Mr. Cope adds that the gravity or sap-stream method of introducing the chemical into the sapwood can be used any time of the year when the wood is not frozen. And he emphasizes the fact that posts must not be split. He prefers chromated zinc chloride to copper sulfate, also used as a preservative, "because chromated zinc chloride is not corrosive to metal."

Copy of Treating Schedule Available from Cornell University

He recommends a solution made by adding one pound of chemical to one gallon of water. In a recent mimeographed statement, he lists a schedule for treating 6-foot fence posts of different diameters. Copy of this statement will be sent upon request. Address J. A. Cope, Dept. of Forestry, State College of Agriculture, Cornell University, Ithaca, N. Y.

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NYLON CITRUS PICKING BAGS HIGHLY SATISFACTORY IN CALIFORNIA TESTS

The same, tough, durable, yet lightweight nylon fabric that is finding so many industrial uses has also been used experimentally with success for citrus-fruit picking bags.

Several lemon and orange picking bags were made up in July, 1947, for experimental evaluation.

"Our pickers like the nylon bags and clamor for more," according to Henry Hoeger, Pest Control and Canvas Department supervisor, and George Kennedy, picking foreman, of Corona Foothill Lemon Company, Corona, Calif., where the tests were made.

Strong, Durable, and Light In Weight

These observers report that the nylon bags are strong, durable, yet light in weight. The experimental bags weigh from 22 to 25 ounces, and carry up to 85 pounds of oranges, lemons, or grapefruit.

Canvas bags, when empty, are three times heavier than the nylon bags used in these tests. Canvas bags get even heavier when wet by rain or dew, and become stiff and hard when they dry. They tend to gather dust and sand, thereby causing abrasion of the fruit. They are cumbersome to handle, both on the ground and on the ladders. They are hard to stack, and take up considerable room on the trucks.

The nylon bags not only outlast canvas bags, but drape well over the picker's shoulder, handle easily and, when wet by dew or rain, retain their pliability on drying. Another advantage of nylon over canvas is the fact that nylon does not deteriorate from mildew.

Nylon bags cost no more than canvas bags made of 14-, 16-, or 18-ounce material, and the consensus is that the nylon bags will cost less. The nylon bags take less time to make, require less reinforcing with rivets and leather, and are easily patched when torn or otherwise damaged.

Nylon Rope or Tape With Wire Stiffener Can Be Used for Bag Opening

Each nylon bag requires about two yards of 45-inch material. Nylon rope or nylon tape with wire stiffener can be used for the bag opening.

The Corona Foothill Lemon Company has a large stock of canvas bags on hand. After these are used up next season, the company will most likely plan to switch over to nylon bags exclusively. Meanwhile, further tests are underway.

#####

ARKANSAS PATHOLOGIST LISTS MISTAKES TO AVOID IN GROWING FALL OATS

Growing oats on the same land in successive years and failure to treat the seed with a fungicide -- two mistakes commonly made by farmers when planting fall oats -- may mean the difference between an excellent and a fair-to-average yield.

That is the conclusion of Dr. H. R. Rosen, plant pathologist with the University of Arkansas Agricultural Experiment Station, following a 2,000-mile survey of that state made last spring.

More Disease Where Oats Grown on Same Land Each Year

Dr. Rosen found that various diseases were much commoner and more destructive in fields where oats followed oats than in fields where rotation was practiced. This was particularly true of the new Helminthosporium or Victoria blight, and of anthracnose and leaf spot.

Dr. Rosen points out that many cotton farmers, accustomed to planting cotton year after year on the same land, have started growing oats on their farms in recent years.

"These growers have not yet realized the importance of rotation on oats stands," he says. "As a consequence, numerous oat fields in cotton areas were badly diseased, whereas in the rice areas, where rotation is commonly practiced, this year's oat crop was one of the cleanest and best in many years."

Presence of Smut Results From Failure to Treat Seed

The Arkansas scientist says the presence of smut this year was the result of the second mistake -- failure to treat the seed. He adds: "When the oat varieties Traveler, DeSoto, and Stanton were first released a few years ago, they were resistant to all races of smut present at that time. Since then, new races of smut which attack these varieties have appeared.

Costs Only Few Cents Per Bushel of Seed

"The best way to control these smut diseases, and also leaf spot, is by seed treatment with a fungicide such as New Improved 'Ceresan' or 'Ceresan' M seed disinfectant. Such treatment will also partly control blight and anthracnose. Since it costs only a few cents per bushel, it is a cheap type of insurance for getting a good oat crop," he concludes.

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AMERICAN FARMERS OPERATE MILLIONS OF AUTOMOTIVE UNITS

American farmers have 3 million tractors that operate 15 million farm implements, an average of about five tools being used with each tractor.

In addition, there are 1,880,000 trucks serving U. S. farms; and 4,860,000 of the country's 37.8 million automobiles are used on American farms. There are more than 1,200,000 other oil-powered engines (900,000 stationary and 300,000 mounted) on farms in this country.

Self-propelled combines increased to about 10,000 in 1947 from 3,539 in 1945, an increase of 183 per cent. Airplanes used in agriculture now approximate 9,000 against about 100 in 1941.

These record numbers of pieces of automotive equipment on farms are important factors responsible for the greatly increased use of oil products and anti-freeze materials in the United States.

On a per capita basis, the people of the United States use about 28 times as much oil for all purposes as the rest of the world, according to a recent statement by the Oil Industry Information Committee, 670 Fifth Avenue, New York 19, N. Y.

The committee's publication, "Current Facts About Petroleum Supply and Demand," from which the foregoing figures are quoted, says: "Because of a high level of income, the farmer has been able to purchase considerable new equipment, such as tractors, stationary engines, and other tools that consume large quantities of petroleum products."

Continued on next page

COOLING SYSTEM SHOULD BE INSPECTED BEFORE ANTI-FREEZE IS ADDED

Many of the millions of units of farm automotive equipment listed on the preceding page are protected during cold weather by anti-freeze to keep the motor from a freeze-up. Because it contains a rust inhibitor, the anti-freeze also helps the motor run more efficiently by keeping the cooling system free from rust and in generally good condition.

Du Pont anti-freeze experts caution users to have a serviceman go over the cooling system before adding anti-freeze. Costly damage can develop from leaks, and under severe conditions an engine block can be ruined, putting the car or tractor or other equipment out of service.

Here is what they say the cooling-system inspection should include:

Inspect Radiator -- If it is rust-clogged, it should be drained and cleaned. A cooling system cleanser is excellent for this purpose.

Check for Leaks -- Radiator hose, hose clamps, and pump should be tight. Serviceman will indicate need for any repairs or replacement.

Try Cylinder Bolts -- If they need tightening, use a special tension wrench.

Check Fan, Belt, and Heater -- Slipping belts should be adjusted or replaced, if worn. Heater hoses should drain properly and not trap air.

Put in Anti-Freeze -- A "Zerone"- "Zerex" anti-freeze chart (copy of which is included in the reprint offered at end of this item) shows amount needed. Radiator tag identifies anti-freeze used, gives degree of protection, and warns against accidental draining.

Experts Recommend Against Re-use of Anti-Freeze

Operators of automotive equipment, both urban and rural, frequently ask whether they should re-use their old anti-freeze solution. Du Pont anti-freeze experts reply that "the risk just isn't worth it."

F. C. Noble, sales manager of the Du Pont "Zerone"- "Zerex" Section, says that except during the acute wartime scarcity, Du Pont has always advised that anti-freeze be drained and discarded in the spring. He points out that during the war, when the government urged motorists to save these solutions, Du Pont strongly recommended addition of a rust inhibitor before re-use of anti-freeze.

Continued on next page

Good Anti-Freeze Materials Offer Two-Fold Protection

Mr. Noble explains that reputable anti-freeze materials offer two-fold protection to the cooling system.

"They not only prevent freezing during cold weather, but also contain inhibitors to reduce corrosion to a minimum," he says. "Under normal conditions, when there are no leaks in the cooling system and it is operating properly, these inhibitors retain their effectiveness for a long time. Now and then, of course, mechanical failures, such as a leaking water pump or hose connection, or an imperfect cylinder-head gasket, may introduce large quantities of air or corrosive exhaust gases into the anti-freeze solution. These gases tend to reduce and may eventually destroy the effectiveness of the rust inhibitor. When this happens, corrosion may be severe.

"Unfortunately, there is no simple and easy way to check the effectiveness of the inhibitor in an anti-freeze that has been used for some time. The presence of large amounts of rust in a solution is a good reason for believing that a mechanical failure may have occurred, and the system should be checked immediately."

Mr. Noble strongly recommends that the operator who saved his anti-freeze last spring consider carefully the risks involved before re-using it this coming winter. And next spring, whether the operator used old or new anti-freeze, Mr. Noble suggests having the serviceman drain and discard the anti-freeze in the radiator.

"Then, he should clean and service the cooling system thoroughly," he continues. "When refilling with water, addition of a good rust inhibitor, or a 10 per cent solution of 'Zerone' anti-freeze will help insure trouble-free driving during the warm months of next summer."

NOTE: For booklets and leaflets on Du Pont's anti-freeze products, write to the Editor, Du Pont "Agricultural News Letter," Wilmington 98, Del. If interested in more technical information, ask also for reprint of article entitled "Anti-Freeze Properties and Cooling System Performance," by E. H. Keller, of the Technical Service Section, Du Pont Ammonia Department.

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